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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,735	11/17/2003	Robert Eugene Handfield JR.	PC23270A	4671
23913	7590	07/02/2007		
PFIZER INC 150 EAST 42ND STREET 5TH FLOOR - STOP 49 NEW YORK, NY 10017-5612			EXAMINER OH, TAYLOR V	
			ART UNIT	PAPER NUMBER
			1625	
			MAIL DATE	DELIVERY MODE
			07/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,735

Applicant(s)

HANDFIELD ET AL.

Examiner

Taylor Victor Oh

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7,9,11 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,9,11, and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/15/07 has been entered.

The Status of Claims

Claims 1, 3, 7, 9, 11, and 14-17 are pending.

Claims 1, 3, 7, 9, 11, and 14-17 are rejected.

DETAILED ACTION

1. Claims , 3, 7, 9, 11, and 14-17 are under consideration in this Office Action.

Priority

2. It is noted that this application claims benefit of 60/429,029 filed on 11/25/02.

Drawings

3. None.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 7, 9, 11, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singer (US2003/0060624 A).

Singer discloses the preparation of 3-[1,3]dioxolan-2-ylidene-3H-1-carbonitrile below (see col. 26 ,paragraph 0214) :

[0214] A solution of tricyclohexylphosphine (536 mg, 1.91 mmol) in tetrahydrofuran (25 mL) was charged with palladium (II) acetate (287 mg, 1.27 mmol) under nitrogen. After 1 hour the reaction mixture was cooled to 0° C. and charged with sodium tert-butoxide (31.6 g, 319 mmol). After 5 minutes a solution of 2-bromo-phenylacetonitrile (25.0 g, 128 mmol) and β -ethoxyacrylic acid ethyl ester (18.4 mL, 128 mmol) in tetrahydrofuran (75 mL) was added dropwise over 15 minutes. The reaction was heated to 60° C. After 2 hours 30 minutes the reaction mixture was cooled to room temperature and charged with ethylene glycol (200 mL) over 5 minutes and then charged with sulfuric acid (18.8 M, 36 mL) added dropwise over 15 minutes. After 15 hours the reaction was diluted with water (90 ml) and a solid product was filtered through a glass frit. The solid was dried under vacuum affording 3-[1,3]dioxolan-2-ylidene-3H-indene-1-carbonitrile (21.6 g, 102 mmol, 80%) as a light tan solid. The crude material was slurried in isopropanol (50 mL) for 2 hours, filtered and dried under vacuum affording 3-[1,3]dioxolan-2-ylidene-3H-indene-1-carbonitrile (20.8 g, 98.5 mmol, 77%) as a light tan solid. ¹H NMR (400 MHz, d₆-DMSO) δ 7.75 (s, 1H), 7.74 (d, 1H, J=7.9), 7.50 (d, 1H, J=7.1), 7.22 (m, 2H), 4.97 (t, 2H, J=7.8), 4.85 (t, 2H, J=7.8); ¹³C NMR (100 MHz, d₆-DMSO) 167.4, 136.7, 135.7, 133.1, 124.7, 123.9, 121.1, 119.4, 118.1, 97.8, 92.7, 71.1, 69.9; mp (decomposition) 228° C.

However, the instant invention differs from the prior art in that the use of ammonium hydroxide is not exemplified; the removal of the solvent by the distillation is not disclosed.

With respect to the removal of the solvent by the distillation, it is well-known in the art that the distillation process is a common practice in any organic synthesis.

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Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the distillation process in the prior art process so as to remove the solvent in the reaction medium rapidly as possible. This is because the skilled artisan in the art would expect such a manipulation to be feasible and successful since its application is well-known in the art.

Regarding the use of ammonium hydroxide as a base in the example, the prior art does mention that the reaction with alkali or alkaline earth metal or ammonium hydroxide or carbonate is generally in an aqueous alcohol or tetrahydrofuran at a temperature from room temperature to 70⁰ C. (see col. 17, lines 8-12); the base can be selected from the group of sodium carbonate, sodium t-butoxide in a solvent such as tetrahydrofuran (see col. 11, paragraph #0129, lines 14-20). From these teachings, there is a teaching of equivalence between ammonium hydroxide and sodium t-butoxide as the base in the process. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use ammonium hydroxide as an alternative base. This is because the skilled artisan in the art would expect such a modification to be feasible and successful as guidance shown in the prior art.

Applicants' Argument

Applicants argue in the followings :

1. there are two advantages over the prior art according to the Declaration of Handefield et al:

- (a) First, removal of solvent by distillation eliminated the formation of undesirable traces of 1, 4-dibutanol in the reaction mixture, which interfered with the reaction and adversely affected yield; and
- (b) Second, removal of solvent by distillation minimized foaming believed to result from in situ formation of a surfactant, thereby producing 1,3-substituted indenenes in a more preferable solid state, rather than in a undesirable gelatinous state.

2. there were a yield and a purity difference before and after the use of NH_4OH and distillation as show in the table (91.60 % yield and 80-99 % in purity) in the Declaration.

The applicants' argument have been noted, but these arguments are not persuasive.

First, with respect to the first and the second arguments, the Examiner has noted applicants' argument. However, the claims are not directed to the purity of the compound as well as the yield of the desired compound, but they are directed to the improved process of producing 1,3- substituted indenenes without those yield and purity. Therefore, it is of the examiner's opinion that applicants should add those limitations to the claims so as to make the application to be in condition for allowance.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Taylor Victor OH, MSD,LAC
Primary Examiner
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